

Issues with the Broadcast of Non-Weather Emergency Messages on CRS

A number of issues with the handling of ADRs (Administrative Message/Follow Up Statement) by CRS came to light during the recent HazCollect National message test. Similar issues likely affect the other NWEM (Non-Weather Emergency Message) types.

Communications Equipment Maintenance Note 63 (Configuration of Console Replacement System [CRS] for HazCollect) gave the procedures for configuring CRS for the various NWEM types. The note is available at https://www.ops1.nws.noaa.gov/Secure/CRS/CRSmaintNote63HazCollect_S.pdf. (This site requires use of e-mail user name and password.) Given the scope of the work required (over 100 message types at many WFOs), it is not surprising that some of these issues arose.

The purpose of this document is to provide WFOs with a checklist to ensure that their CRS will properly broadcast and alarm all NWEMs in their Broadcast Service Area. *Parenthetical references are to specific sections in Maintenance Note 63.*

1. Ensure that all necessary NWEM types have been added to the CRS database (*Maint Note 63 A.3.3, A.3.3.1, Appendix 3*).

This includes all 17 NWEM product types from your office and all neighboring offices that are in your Broadcast Service Area, including all state NWEM product types (e.g., ADRFL, CEMMT).

2. Ensure that all ADR product types have been included in all suite categories on all the transmitters that they should play on. ADRs should not be suite trigger messages. (*A.3.1, A.3.3.2, A.3.3.3*)

ADRs need to be included in the general, high, and exclusive suites for whatever transmitter(s) they need to play on. Since they will appear in all suite categories, do not include ADRs as triggers for any CRS suites. Don't forget to check for the statewide ADR messages (e.g. ADRTX), as they will be used whenever a state or national NWEM test or follow-up message is generated.

3. Ensure that all of the other NWEM types (those other than ADR) are included in the appropriate suite categories on all the transmitters that they should play on, and are included as triggers for the appropriate suite category. (*A.3.1, A.3.3.2, A.3.3.3*)

NWEM Warnings (specifically AVW, CDW, CEM, EVI, EQW, FRW, HMW, LEW, NUW, RHW, SPW, and VOW) should **only** be defined in Exclusive suites, and be set as triggers for whatever Exclusive suite in which they appear.

NWEM Watches and Emergencies (specifically AVA, CAE, LAE, TOE) should be defined in both High and Exclusive suites, and be set as trigger messages for whatever High suite in which they appear.

Don't forget to check for the statewide NWEMs (e.g., CEMAR, CAEIL), as they will be used whenever a state or national NWEM is generated.

Note that if your office does not use both Exclusive and High suites:

- NWEM Warnings should appear in the same suite category as short-duration weather warning messages (e.g., TOR, FFW), with the appropriate suite trigger, and
- NWEM Watches and Emergencies should appear in the same suite category(s) as weather watch messages (e.g., SVA, TOA), with the appropriate suite trigger.

4. Ensure that “000” in the CRS Transmitter menu Listening Areas maps to all of the appropriate transmitters. (A.3.3 Note 2)

All National and state-wide NWEMs will use “000” in the UGC rather than individual county FIPS numbers. For example, a statewide message for Delaware would be encoded as “DEC000-” rather than “DEC001-003-005-” for the three counties in the state. The “DEC000” code needs to map to every transmitter which will broadcast to any part of Delaware.

5. Barring regional requirements, ensure that all NWEM message types, including ADRs, are set up in the CRS database to transmit SAME tones to all the appropriate transmitters. (A.3.3 Table A.3-1, Appendix 2)

Under the current HazCollect Concept of Operations, all NWEMs are to receive SAME tones whenever they are broadcast, including ADRs. Some regions may have adopted special regional or local SAME requirements, and if you are in those regions, follow those guidelines. If not, all NWEMs should include SAME tones.

6. Avoid placing NWEMs in CRS groups.

Apparently to ease the programming chore when adding all the NWEMs to their CRS database, some WFOs have placed NWEMs into CRS groups. The CRS Software Branch has in the past **strongly** advised offices **not** to place warning messages into groups. See <http://www.weather.gov/ops2/crs/document/nwrsametones.pdf> for details. Unexpected repetition of tones is possible when multiple NWEMs are broadcast, if the NWEMs are in groups.

Offices are **strongly** advised to list NWEMs individually in CRS suites and to **not** use groups.

7. Make use of the Message Type Association feature in CRS. (A.3.3.5)

Under the HazCollect concept of operations, all NWEM follow-up messages sent through HazCollect will be ADRs. Using the Message Type Association message replace feature will allow CRS to automatically replace all initial NWEMs with follow-up ADRs, when the listening area codes (i.e., UGC) match. Also, refer to the following document on the CRS website:

http://www.weather.gov/ops2/crs/document/MESSAGE_ASSOCIATION_TABLE.pdf

There is a possibility that a follow-up ADR for a given area will update multiple NWEMs, should they exist for that area. However, if the message replace feature is **not** used, WFOs will need to **manually** remove NWEMs from the CRS broadcast cycle when they are updated by an ADR.

There are a few other NWEM issues that have arisen as a result of the HazCollect testing.

1. For now, NWRWAVES does not handle NWEMs. (A.3.1)

The initial HazCollect concept of operations relied on a special CAFE NWEM formatter to process NWEMs. This decision was made long before NWRWAVES was conceived. The current plan is for NWRWAVES to begin processing NWEMs in the OB 8.x time frame. Until that point, the CAFE NWEM formatter is the one that will be used.

2. Remember that ADRs (and other NWEM Emergency and Watch messages) are non-interrupts. (A.3.3 Table A.3-1, A.3.3.4, Appendix 2)

While all the NWEM Warnings are sent to CRS as interrupt messages, the NWEM Watches, Emergencies, and Administrative messages (i.e., AVA, CAE, LAE, TOE, and ADR) are sent to CRS as non-interrupt messages. Depending on how long the broadcast cycle is on a given transmitter, and where the message gets placed in that cycle, several minutes may pass between the receipt of an AWIPS red banner for an AVA, CAE, LAE, TOE, or ADR and the broadcast of that message – and the time will vary from transmitter to transmitter.

3. The CAFE NWEM formatter handles messages differently than other CRS formatters.

The CAFE NWEM formatter processes all NWEMs of a given PIL (i.e., the AREAS variable is set to ALL). It does not check the UGC of the incoming message. As long as your office broadcasts an NWEM for at least one county or marine zone, the formatter will create a broadcast message which is sent to CRS. If the message is valid for any part of your Broadcast Service Area, the message will be broadcast on the appropriate transmitter(s). If the message is valid **only** for an area outside your Broadcast Service Area, the message will instead be sent to Weather Message Correction, a non-fatal medium priority Alert Monitor error message 308 will be generated, and no broadcast will be made.

WFO staff need to be aware of this, so that they are not surprised when an NWEM red banner appears on AWIPS but no message is broadcast on CRS. At the least, the red banner should be used for staff situational awareness, in case the NWEM event later expands or if office backup is later required.